

What is claimed is:

- 1 1. A patient-shielding and coil system, comprising:
  - 2 a coil wire electrically coupled to a source of electrical current;
  - 3 an electrically conductive surface;
  - 4 insulation material situated between the coil wire and the conductive surface; and
  - 5 a drain wire connected to the conductive surface and forming a capacitive current loop
  - 6 with respect to the source.
  
- 1 2. A system according to claim 1, wherein the conductive surface has a resistance of  
2 substantially 1 ohm per square.
  
- 1 3. A system according to claim 1, wherein the electrically conductive surface forms an  
2 incomplete enclosure of the coil wire, so as to create an incomplete electrical circuit.
  
- 1 4. A system according to claim 1, wherein the conductive surface includes an upper  
2 portion and a lower portion.
  
- 1 5. A system according to claim 1, wherein the conductive surface includes a polyester foil,  
2 vapor deposited with aluminum.